Hydronic Kits
VKB



Hydronic systems
VKB 2.0

The VKB 2.0 units are buffer storage tanks with accessories (without circulation pump) designed in order to significantly reduce the set-up time for the conditioning and cooling devices.

Standard equipment

Capacity: from 250 to 1.500 l
Tank material: carbon steel
Fluid types:
- water
- Ethylene glycol up to 40%
- Propylene glycol up to 40%

Insulation: anti-condensate elastomer
Execution: Layout 1

Standard equipment usage limit

Fluid temperature	Environment temp.	Max. pressure
5°C / +60°C	10°C / +40°C	3 bar

Complete with all hydraulic components which are indispensable for the correct functioning of the hydraulic circuit for the distribution of chilled water, the components can be coupled with all kind of water coolers. The units consist of an insulated buffer tank, an expansion vessel, a safety valve, a deaerator, a fill/drain valve and a manometer.

The VKB 2.0 units are enveloped in a supporting structure in a galvanized steel and powder coated panels and base. They are designed to guarantee an easy inspection and maintenance of the components. The tank, which is hydraulically inserted between the cooling station and the fan-coils, makes the water content in the entire installation increase, by increasing the pause between the shutdown of the compressor and the next start-up. In this way, the number of start-ups is significantly reduced, which improves the life span and performance of the compressor. The broad range of storage tanks makes it possible to meet every requirement. Every unit is assembled in our factory and tested to guarantee our trustworthiness.

Accessories: See pag. 146 for the list of available accessories



Special equipment usage limit available on configurator (see page 108)

Fluid temperature	Environment temp.	Max. pressure
-20°C / +60°C	-20 / +40°C	3 bar

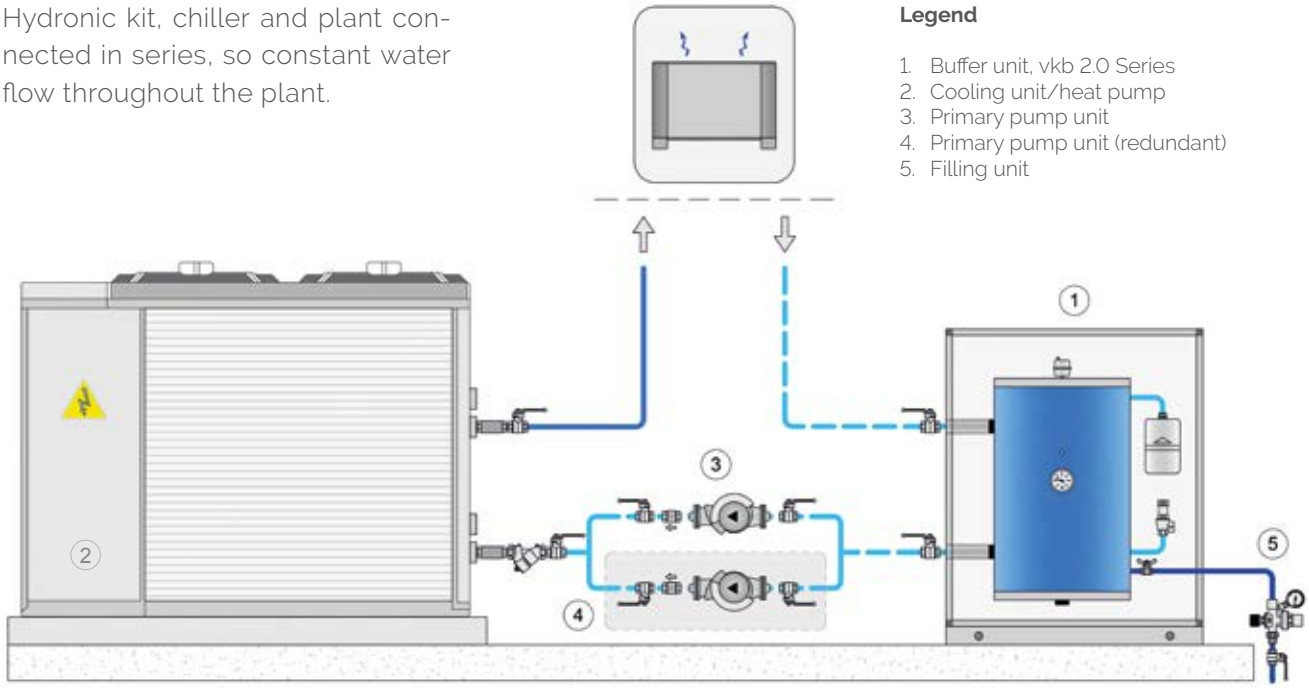
Upon request, it is possible to produce versions with special equipment to operate at temperatures and pressures outside the standard usage limits. These equipments include, for example, increased insulation, antifreeze kits, stainless steel connections and tank.

Hydronic systems
VKB 2.0 Layout 1 STANDARD

Hydronic kit, chiller and plant connected in series, so constant water flow throughout the plant.

Legend

1. Buffer unit, vkb 2.0 Series
2. Cooling unit/heat pump
3. Primary pump unit
4. Primary pump unit (redundant)
5. Filling unit

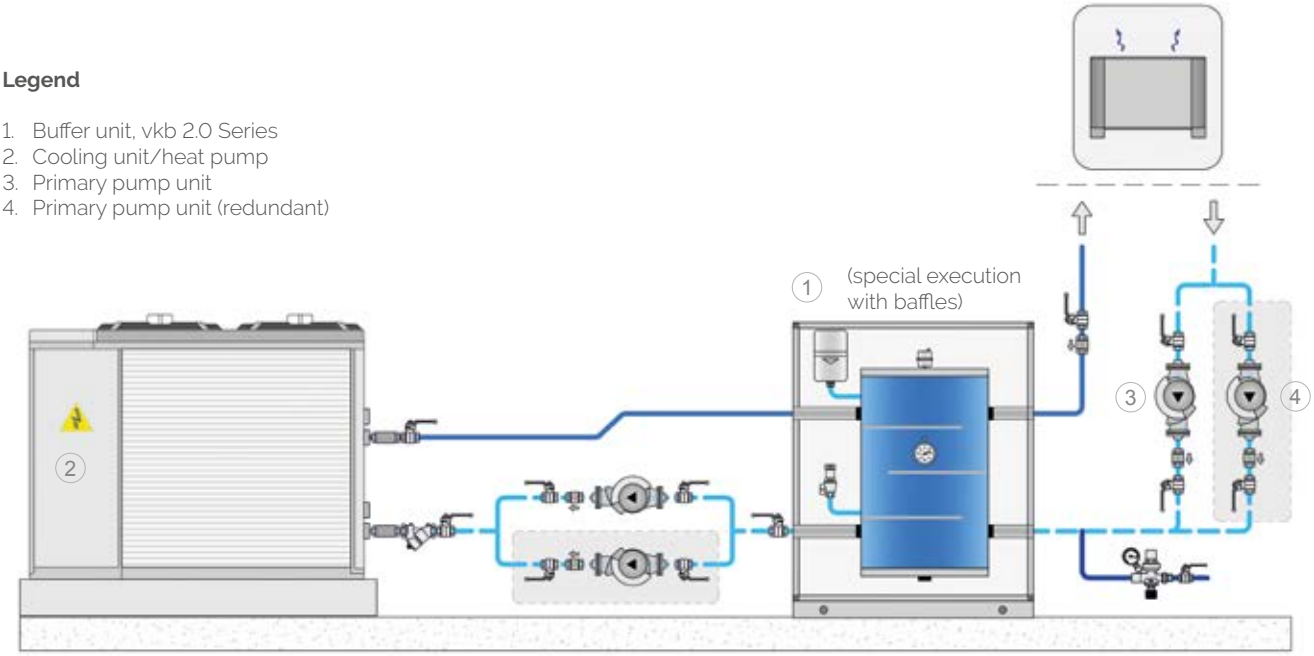


Hydronic systems
VKB 2.0 Layout 2 SPECIAL VERSION

Hydronic Kit and Chiller create the primary circuit, Hydronic Kit and Plant create the secondary circuit. Hence, the two circuits have independent flow rates. The VKB shown below is a special execution with baffles.

Legend

1. Buffer unit, vkb 2.0 Series
2. Cooling unit/heat pump
3. Primary pump unit
4. Primary pump unit (redundant)

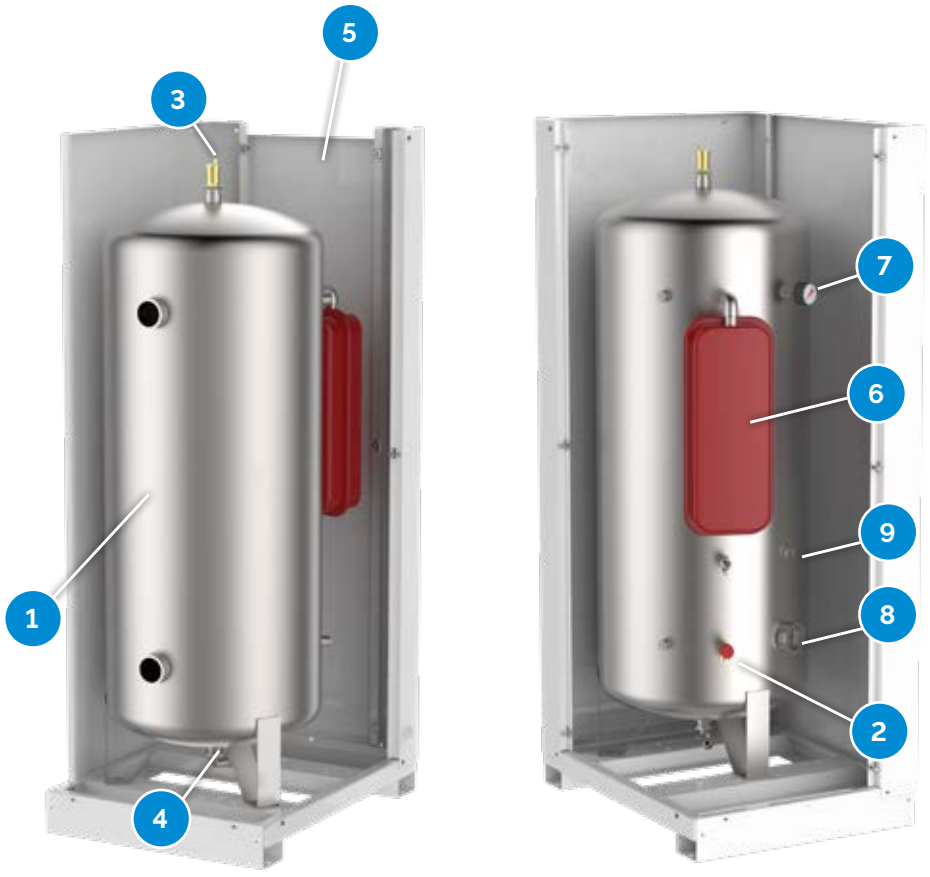


Hydronic systems
VKB 2.0

VKB 2.0 Description of the main components

- **Storage tank**
  The storage tank is made of varnished carbon steel plates and is insulated with closed cell elastomer . This type of insulation, guarantees an excellent resistance to condensate formation.
- **Fill up valve**
  This valve refills the hydraulic circuit in the demand peak phase as well as during normal functioning.
- **Safety valve**
  Calibrated at 6 bar and with canalised drain. It protects the unit from possible overpressure.
- **Automatic valve for air drain**
  Placed on the upper part of the unit, it drains air from the unit.
- **Drain valve**
  It drains air from the lowest point of the tank to make drainage possible.
- **Supporting structure**
  The base is made of thick steel plates varnished. The basement and panels are made in galvanized steel and powder coated which are resistant to atmospheric agents. All this makes it possible for the VKB 2.0 to be installed in non-technical spaces and in places exposed to atmospheric agents.
- **Expansion vessel**
  Supplied with a membrane, preloaded nitrogen and with dimensions that can absorb varying volumes of liquid derived from the various temperatures.
- **Manometer**
  This device is placed on the tank and indicates the internal pressure.

Components	
1	Storage tank
2	Safety valve
3	Automatic safety valve
4	Drain
5	Supporting structure
6	Expansion vessel
7	Manometer
8	Predisposition for electrical resistance
9	Predisposition for thermostat



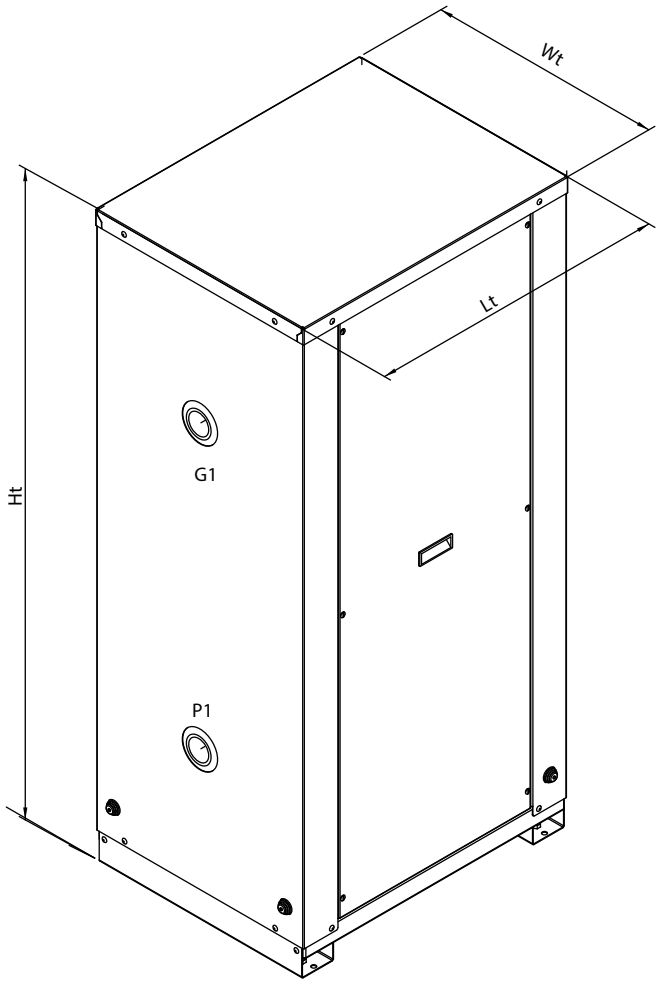
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VKB 2.0

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Capacity l	Vessel l	Vessel calibration bar	Safety valve bar	Couplings inch	Wt mm	Lt mm	Ht mm	P1 mm	G1 mm
250	12	1	6	2"	590	750	1600	420	1220
500	18	1,5	6	3"	750	1000	1850	420	1470
1000	25	1,5	6	4"	1100	1100	1850	610	1410
1500	2x25	1,5	6	4"	1200	1200	1950	650	1450

Capacity l	Code	Price	Dimensions with packaging mm	Weight kg
250	838050090X		625x785x1670	95
500	838050091X		800x1050x1920	155
1000	838050092X		1150x1150x1920	255
1500	838050016		1250X1250X2020	313



Couplings legend

G1	From plant Threaded connection
P1	To energy source Threaded connection

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Hydronic systems
VKB 2.0 accessories

1 From threaded to flanged galvanized connections

The codes and prices below are for single item. The adapter must be screwed onto the existing connection. The adapter is not welded on the ferrule, for special executions ask for a quote.



Original connection	Transformed connection uni-en pn 16	Code	Price
1"1/2	DN 40	838081200X	
	DN 50	838081201X	
2"	DN 50	838081202X	
	DN 65	838081203X	
2"1/2	DN 65	838081204X	
	DN 80	838081205X	
3"	DN 80	838081206X	
	DN 100	838081207X	
4"	DN 100	838081208X	
	DN 125	838081209X	

2 From threaded to Grooved galvanized connections

The codes and prices below are for single item.
The adapter must be screwed onto the existing connection. The adapter is not welded on the ferrule, for special executions ask for a quote.



Original connection	Transformed connection	Code	Price
1"1/2	1"1/2	838081211X	
	2"	838081212X	
2"	2"	838081213X	
	2"1/2	838081214X	
2"1/2	2"1/2	838081215X	
	3"	838081216X	
3"	3"	838081217X	
	4"	838081218X	
4"	4"	838081219X	
	5"	838081220X	

3 Electrical resistor

IP 65 Protection



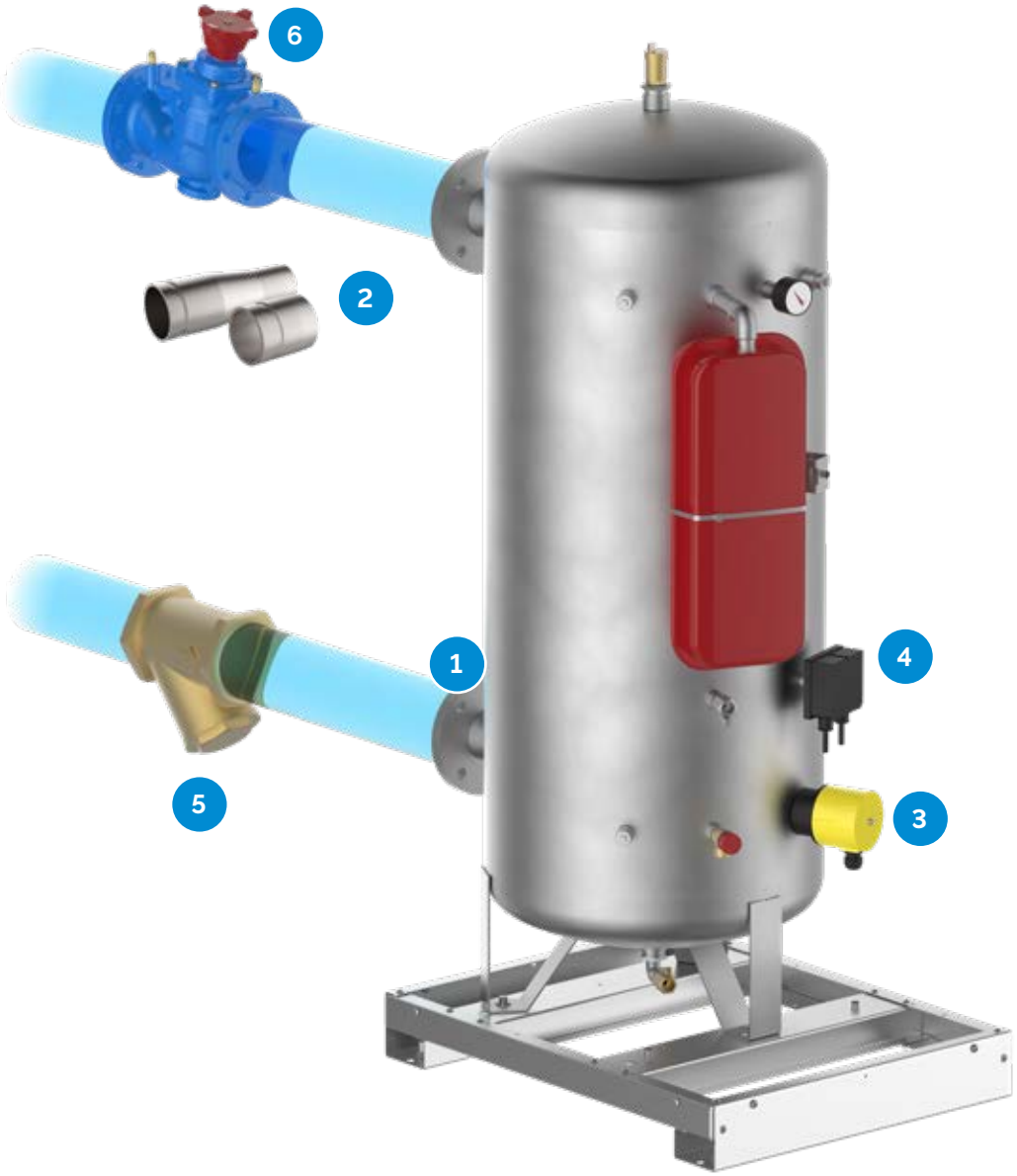
Power W	Voltage V	Element number	Connection diameter inch	Length mm	Code	Price
1300	230/380	3	2"	220	C24100008	
2000	230/380	3	2"	290	C24100009	
3000	230/380	3	2"	340	C24100010	
4000	230/380	3	2"	390	C24100012	

4 Temperature controls



Description	Temperature range	Safety range	Code	Price
Thermostat	0 ÷ 90 °C	-	C22010004	
Bithermostat	0 ÷ 90 °C	fix 100 °C	C22010006	
Antifreeze Bithermostat	-30 ÷ 30 °C	0 ÷ 90 °C	C22010007	

Hydronic systems
VKB 2.0 accessories



5 **Filter (special version)**
Mesh filter, with 1000 micron holes, can be placed outside the unit to protect the pumps from any impurities in the equipment.
see page: 133

6 **Balancing valves (special version)**
Valve can be connected externally to balance the flow within the circuit.
see page: 133

Tailored connections (special version)
Flangiate (in various materials), Grooved (in various materials), Larger
see page: 133

Stainless steel execution
In projects where the fluid temperature is between -11°C and -20°C, the hydronic kits are produced in a special configuration by replacing the standard hydraulic components with components suitable for working at low temperatures by exploiting the characteristics of the stainless steel material.
see page: 133

Increased insulation
This increased insulation compared to the standard allows the use of the kit in particularly harsh temperature conditions (from +4°C to -20°C), avoiding the formation of ice or condensation.
see page: 133



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